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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,318	03/28/2001	Ravi Prakash	CHA9 2001 0003US1	4786

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EXAMINER

HAVAN, THU THAO

ART UNIT PAPER NUMBER

2672

DATE MAILED: 09/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/816,318

Applicant(s)

PRAKASH ET AL.

Examiner

Thu-Thao Havan

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-15, 22, 23 and 26 is/are rejected.
- 7) ☒ Claim(s) 4-9, 16-21, 24, 25 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

### Drawings

2. Formal drawings filed on May 30, 2001 are approved.

### Claim Objections

3. Claims **4-9, 16-21, 24-25, and 27** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to anticipate or rendered obvious the technical features of claims **4-9, 16-21, 24-25, and 27**. The prior art fails to teach or suggest the step of creating the rotated image is provided by applying the following algorithm to the first image data:  $V_o = K_h * K_v (V1 + V4 - V2 - V3) + K_h (V3 - V4) + K_v (V2 - V4) + V4$ .

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims **1-3, 10-15, 22-23, and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US patent no. 6,154,576) in view of Deering (US patent no. 6,489,956).

Re claims **1, 10, 23, and 26**, Anderson teaches rotating a first image in an image buffer, the method comprising the steps of extracting first image data from the image buffer (col. 4, lines 1-18) and creating a rotated image that is substantially free of aliasing error using weighted sums of data points of the first image (col. 23, line 50 to col. 24, line 44); and a computer program product (col. 8, line 41 to col. 10, line 45). In other words, Anderson teaches the sample-to-pixel calculation unit is operable to adjust the filtering of stored samples to reduce or adjust the filtering of stored samples to reduce or adjust artifacts. For example, the sample-to-pixel calculation unit may select and filter a first set of stored samples to generate first output pixels for display using a first filter, and may later select and filter a second set of stored samples to generate second output pixels for display using a second filter different than the first filter. The sample-to-pixel calculating unit may selectively adjust the filtering of stored samples in neighboring frames by simulation of various screen effect or display effects, such as panning, zooming, and the like such as position and rotation changes.

Anderson does not specifically disclose a module and weighting depends on a skew angle of the first image (fig. 13). However, Deering teaches weighting depends on a skew angle of the first image (col. 19, line 43 to col. 20, line 13; fig. 13) and he teaches a module (col. 5, line 40 to col. 8, line 54; figs. 4-5 and 7b) for antialiasing of text overlays on electronic images. The antialiasing module adjusts the inactive pixels

of each character of the character text string based upon the surrounding pixels in the bit-mapping data. The anti-aliasing module overlays the electronic image with the active and adjusted text character pixels. Therefore, it would have been obvious for one of ordinary skill in the art to combine a module of Deering to the system of Anderson because it would enable programs to run in a module to operate image rotation with no aliasing error (Deering: col. 5, line 40 to col. 8, line 54; figs. 4-5 and 7b).

As for the claimed limitation "weighting depends on a skew angle of the first image," Deering teaches weighting depends on a skew angle of the first image (col. 19, line 43 to col. 20, line 13; fig. 13). He teaches the perturbed regular grid positioning scheme is based upon the previous definition of a regular grid. The samples in perturbed regular grid scheme may be offset from their corresponding grid intersection. The samples may be offset by a *random angle* (e.g., from 0.degree. to 360.degree. or i.e. a skew angle) and a random distance, or by random x and y offsets, which may or may not be limited to a predetermined range. The offsets may be generated in a number of ways, e.g., by hardware based upon a small number of seeds, looked up from a table, or by using a pseudo-random function. Once again, perturbed regular grid scheme may be based on any type of regular grid (e.g., square, or hexagonal). A rectangular or hexagonal perturbed grid may be particularly desirable due to the geometric properties of these grid types. Therefore, it would have been obvious for one of ordinary skill in the art to combine a skew angle of Deering to the system of Anderson because it would enable samples being offset by a random angle for a skew angle (Deering: col. 19, line 43 to col. 20, line 13; fig. 13).

Re claim **2**, Anderson discloses the document (col. 1, lines 18-40). In other words, Anderson teaches antialiasing of text overlayings on electronic images. Thus, the text in electronic images is in a document format. Turning now to figure 9, the samples are randomly offset from a regular square grid by x- and y-offsets. As the enlarged area shows, sample has an x-offset that specifies its horizontal displacement from its corresponding grid intersection point. Similarly, sample also has a y-offset that specifies its vertical displacement from grid intersection point. The *random offset may also be specified by an angle and distance*. As with the previously disclosed embodiment that utilized angles and distances, x-offset and y-offset may be limited to a particular minimum and or maximum value or range of values.

Re claims **3 and 15**, Anderson discloses a database (figs. 3-4 and 6). Anderson discloses a computer system with a CPU, RAM, DRAM, graphics managers, etc that consists of different data storage in a database.

Re claims **11-12**, Anderson discloses the data points of the initial image are in adjacent rows of the image buffer (col. 8, line 55 to col. 9, line 5; fig. 5). Pixilated character is represented by a plurality of pixel rows and a plurality of pixel columns in antialiasing module consisting of frame buffers.

Re claims **13-14**, Anderson discloses an image generation module (fig. 4). Figure 4 discloses antialiasing module which corresponds to an image generating module.

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Re claim **22**, Anderson discloses an initial image stored in an image buffer (figs. 5-6). In figure 6, the raw image data is stored in the frame buffer that allows it to be manipulated in any forms.

### Inquiries

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu-Thao Havan whose telephone number is (703) 308-7062. The examiner can normally be reached on Monday to Thursday from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703) 305-4713.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231


or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Thu-Thao Havan  
September 11, 2003



**MICHAEL RAZAVI**  
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